

Chemical Analysis Report

TLH-ROC-2019-07-24-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Run 3**
Request ID: **RQ-2019-07-08-49**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Tallahassee, FL 32399
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Certified by: Colin Wright, Program Administrator

Date Certified: 21-AUG-2019 14:55

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: WOODS CREEK @ OSTEEN RD

Collection Date/Time: 07/24/2019 11:05

Field ID: G1TLHR0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105867	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P367859	
	EPA 300.0 Rev. 2.1	Chloride	6.1		mg Cl/L	P367959	
		Sulfate	2.5		mg SO4/L	P367961	
	SM 2120 B	Color (true)	77		PCU	P368025	
	SM 2320 B-97	Total Alkalinity	181	A	mg CaCO3/L	P368234	
	SM 2540 C-97	TDS	202	A	mg/L	P368347	
	SM 2540 D-97	TSS	2	UA	mg/L	P368004	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P368237	
2105868	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P368488	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.19	I	mg N/L	P368087	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.064		mg N/L	P367989	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P367985	
	SM 5310 B-00	Organic Carbon	7.2		mg C/L	P368052	
2105869	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P367846	
2105881	EPA 8321B	2,4-D	0.0020	U	ug/L	P367818	
		Acesulfame K**	0.10	U	ug/L	P367853	
		AMPA**	0.10	U	ug/L	P367853	
		Sucralose**	0.010	U	ug/L	P367853	
		Acetaminophen**	0.0080	U	ug/L	P367818	
		Endothall**	0.25	U	ug/L	P367853	
		Glufosinate**	0.10	U	ug/L	P367853	
		Glyphosate**	0.10	U	ug/L	P367853	
		Bentazon	8.0E-04	U	ug/L	P367818	
		Carbamazepine**	8.0E-04	U	ug/L	P367818	
		Diuron	0.0020	U	ug/L	P367818	
		Fenuron	0.016	U	ug/L	P367818	
		Fluridone**	8.0E-04	U	ug/L	P367818	
		Imazapyr**	0.0079	I	ug/L	P367818	
		Hydrocodone**	0.0020	U	ug/L	P367818	
		Ibuprofen**	0.020	U	ug/L	P367818	
		Imidacloprid	0.0037	I	ug/L	P367818	MS
		Linuron	0.0040	U	ug/L	P367818	
		MCP	0.0020	U	ug/L	P367818	MS
		Naproxen**	0.0080	U	ug/L	P367818	
		Primidone**	0.0040	U	ug/L	P367818	
		Pyraclostrobin**	0.0020	U	ug/L	P367818	
		Triclopyr**	0.0040	U	ug/L	P367818	MS

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: AUCILLA RIVER @ MOUTH

Collection Date/Time: 07/24/2019 12:10

Field ID: G1TLHR0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105864	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P367859	
	EPA 300.0	Bromide	14		mg Br/L	P367963	
	SM 2320 B-97	Total Alkalinity	120		mg CaCO3/L	P368376	
	SM 2540 D-97	TSS	6	I	mg/L	P368004	
	SM 4500 F-C-97	Fluoride	0.33		mg F/L	P368238	
2105865	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P368343	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P368084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.041		mg N/L	P368060	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P368074	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P368052	
2105866	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P367844	
2105880	EPA 8321B	2,4-D	0.0020	U	ug/L	P367818	
		Acesulfame K**	0.10	UJ	ug/L	P367853	SUR
		AMPA**	1.0	U	ug/L	P367853	
		Sucralose**	0.010	U	ug/L	P367853	
		Acetaminophen**	0.0080	U	ug/L	P367818	
		Endothall**	0.25	UJ	ug/L	P367853	SUR
		Glufosinate**	1.0	U	ug/L	P367853	
		Glyphosate**	1.0	U	ug/L	P367853	
		Bentazon	8.0E-04	U	ug/L	P367818	
		Carbamazepine**	8.0E-04	U	ug/L	P367818	
		Diuron	0.0020	U	ug/L	P367818	
		Fenuron	0.016	U	ug/L	P367818	
		Fluridone**	8.0E-04	U	ug/L	P367818	
		Imazapyr**	0.0098	I	ug/L	P367818	
		Hydrocodone**	0.0020	U	ug/L	P367818	
		Ibuprofen**	0.020	U	ug/L	P367818	
		Imidacloprid	0.0020	U	ug/L	P367818	MS
		Linuron	0.0040	U	ug/L	P367818	
		MCP	0.0020	U	ug/L	P367818	MS
		Naproxen**	0.0080	U	ug/L	P367818	
		Primidone**	0.0040	U	ug/L	P367818	
		Pyraclostrobin**	0.0020	U	ug/L	P367818	
		Triclopyr**	0.0040	U	ug/L	P367818	MS
2105882	EPA 200.7 Rev. 4.4	Iron	270	I	ug/L	P368222	
		Manganese	22		ug/L	P368222	
		Zinc	15	U	ug/L	P368222	
	EPA 200.8 Rev. 5.4	Aluminum	160	I	ug/L	P368222	
		Antimony	0.20	U	ug/L	P368222	
		Arsenic	1.21		ug/L	P368222	
		Cadmium	0.080	U	ug/L	P368222	
		Chromium	4.0	U	ug/L	P368222	
		Copper	1.6	U	ug/L	P368222	

Field ID: G1TLHR0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2105882	EPA 200.8 Rev. 5.4	Lead	0.80	U	ug/L	P368222	
		Nickel	5.0	U	ug/L	P368222	
		Selenium	2.0	U	ug/L	P368222	
		Silver	0.040	U	ug/L	P368222	
		Thallium	0.40	U	ug/L	P368222	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in sample duplicate. MDL for some parameters elevated due to matrix interference.

EPA 200.7 Rev. 4.4: The sample required dilution due to matrix interference.

EPA 200.8 Rev. 5.4: The sample required dilution due to matrix interference.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367859

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368222

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P368222

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P367963

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367959

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367961

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368343

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368084

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368060

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368074

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367844

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367846

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P367818

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.076		ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P367853

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P368025

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P368234

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2320 B-97
Batch ID: P368376

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P368347

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P368004

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P368238

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P368052

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Manganese	100		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P368222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	99.5		P	85 - 115
Arsenic	101		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	97.5		P	85 - 115
Copper	97.7		P	85 - 115
Lead	102		P	85 - 115
Nickel	99.6		P	85 - 115
Selenium	96.0		P	85 - 115
Silver	103		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P367963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	95.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368343

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	110		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	104		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368060

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368074

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367844

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367846

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P367818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	157		P	40 - 160
Acetaminophen	121		P	30 - 150
Bentazon	111		P	30 - 150
Carbamazepine	108		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P367818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	109		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	103		P	40 - 150
Hydrocodone	102		P	40 - 150
Ibuprofen	104		P	30 - 150
Imazapyr	75.3		P	40 - 150
Imidacloprid	108		P	40 - 150
Linuron	93.7		P	40 - 150
MCPP	160		P	40 - 160
Naproxen	133		P	40 - 150
Primidone	102		P	40 - 150
Pyraclostrobin	101		P	30 - 150
Triclopyr	108		P	30 - 150

Reference Method: EPA 8321B
Batch ID: P367853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	131		P	40 - 150
AMPA	74.0		P	40 - 150
Endothall	106		P	40 - 150
Glufosinate	82.9		P	40 - 150
Glyphosate	85.2		P	40 - 140
Sucralose	71.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P368025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P368234

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P368376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P368237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P368238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368052

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105061	Iron	99.1		P	70 - 130
2105061	Manganese	93.9		P	70 - 130
2105061	Zinc	101		P	70 - 130
2106936	Iron	98.3	97.6	P/P	70 - 130
2106936	Manganese	93.9	94.0	P/P	70 - 130
2106936	Zinc	99.4	100	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P368222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105061	Aluminum	113		P	70 - 130
2105061	Antimony	107		P	70 - 130
2105061	Arsenic	117		P	70 - 130
2105061	Cadmium	102		P	70 - 130
2105061	Chromium	91.0		P	70 - 130
2105061	Copper	71.5		P	70 - 130
2105061	Lead	110		P	70 - 130
2105061	Nickel	107		P	70 - 130
2105061	Selenium	101		P	70 - 130
2105061	Silver	101		P	70 - 130
2105061	Thallium	109		P	70 - 130
2106936	Aluminum	98.7	92.0	P/P	70 - 130
2106936	Antimony	101	94.5	P/P	70 - 130
2106936	Arsenic	108	102	P/P	70 - 130
2106936	Cadmium	99.2	93.5	P/P	70 - 130
2106936	Chromium	91.1	86.3	P/P	70 - 130
2106936	Copper	98.7	94.3	P/P	70 - 130
2106936	Lead	101	94.1	P/P	70 - 130
2106936	Nickel	98.1	94.1	P/P	70 - 130
2106936	Selenium	103	101	P/P	80 - 120
2106936	Silver	97.4	93.3	P/P	70 - 130
2106936	Thallium	100	94.3	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P367963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105130	Bromide	92.9		P	90 - 110
2105217	Bromide	91.3	91.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105682	Chloride	101		P	90 - 110
2105815	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105682	Sulfate	102		P	90 - 110
2105815	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105376	Ammonia-N	98.9	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105797	Ammonia-N	109	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105395	Kjeldahl Nitrogen	98.4	97.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105868	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105816	NO2NO3-N	93.5	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105865	NO2NO3-N	99.6	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105896	Total-P	101	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368074

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106442	Total-P	99.9	98.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P367844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105456	O-Phosphate-P	95.2	93.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P367846

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105692	O-Phosphate-P	93.0	94.0	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P367818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105641	Acetaminophen	115	112	P/P	30 - 150
2105641	Bentazon	64.3	66.7	P/P	30 - 150
2105641	Carbamazepine	100	101	P/P	40 - 150
2105641	Diuron	98.8	97.3	P/P	40 - 150
2105641	Fenuron	87.1	85.4	P/P	40 - 150
2105641	Fluridone	107	111	P/P	40 - 150
2105641	Hydrocodone	108	102	P/P	40 - 150
2105641	Ibuprofen	133	125	P/P	30 - 150
2105641	Imazapyr	88.8	84.8	P/P	40 - 150
2105641	Imidacloprid	217	226	F/F	40 - 150
2105641	Linuron	94.4	93.6	P/P	40 - 150
2105641	MCP	243	239	F/F	40 - 150
2105641	Naproxen	144	142	P/P	40 - 150
2105641	Primidone	115	99.3	P/P	40 - 150
2105641	Pyraclostrobin	113	118	P/P	30 - 150
2105641	Triclopyr	186	195	F/F	30 - 150

Reference Method: EPA 8321B
 Batch ID: P367853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105639	Acesulfame K	106	111	P/P	40 - 150
2105639	AMPA	53.6	55.8	P/P	40 - 150
2105639	Endothall	90.9	89.6	P/P	40 - 150
2105639	Glufosinate	71.3	73.9	P/P	40 - 150
2105639	Glyphosate	81.2	79.9	P/P	40 - 140
2105639	Sucralose	81.6	82.9	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P368237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105867	Fluoride	96.4	97.0	P/P	89 - 106

Reference Method: SM 4500 F-C-97
 Batch ID: P368238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106005	Fluoride	93.5	95.0	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P368052

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2105686	Organic Carbon	98.9	97.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P367859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105824	Turbidity	4.03	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P368222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106936	Iron	0.714	Spike	P	0 - 20
2106936	Manganese	0.122	Spike	P	0 - 20
2106936	Zinc	0.644	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P368222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106936	Aluminum	7.02	Spike	P	0 - 20
2106936	Antimony	6.76	Spike	P	0 - 20
2106936	Arsenic	5.47	Spike	P	0 - 20
2106936	Cadmium	5.91	Spike	P	0 - 20
2106936	Chromium	5.31	Spike	P	0 - 20
2106936	Copper	4.59	Spike	P	0 - 20
2106936	Lead	6.75	Spike	P	0 - 20
2106936	Nickel	4.18	Spike	P	0 - 20
2106936	Selenium	1.97	Spike	P	0 - 20
2106936	Silver	4.29	Spike	P	0 - 20
2106936	Thallium	5.85	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P367963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105217	Bromide	0.403	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105682	Chloride	0.923	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P367961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105682	Sulfate	1.17	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105376	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105797	Ammonia-N	0.0502	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105395	Kjeldahl Nitrogen	1.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105868	Kjeldahl Nitrogen	2.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P367989

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105816	NO2NO3-N	0.563	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105865	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P367985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105896	Total-P	3.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106442	Total-P	0.993	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105456	O-Phosphate-P	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P367846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105692	O-Phosphate-P	1.07	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P367818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105641	2,4-D	5.11	Spike	P	0 - 30
2105641	Acetaminophen	2.57	Spike	P	0 - 30
2105641	Bentazon	3.64	Spike	P	0 - 30
2105641	Carbamazepine	0.342	Spike	P	0 - 30
2105641	Diuron	1.41	Spike	P	0 - 30
2105641	Fenuron	2.00	Spike	P	0 - 30
2105641	Fluridone	4.02	Spike	P	0 - 30
2105641	Hydrocodone	5.44	Spike	P	0 - 30
2105641	Ibuprofen	6.38	Spike	P	0 - 30
2105641	Imazapyr	4.31	Spike	P	0 - 30
2105641	Imidacloprid	3.47	Spike	P	0 - 30
2105641	Linuron	0.874	Spike	P	0 - 30
2105641	MCPP	1.35	Spike	P	0 - 30
2105641	Naproxen	1.83	Spike	P	0 - 30
2105641	Primidone	14.6	Spike	P	0 - 30
2105641	Pyraclostrobin	4.00	Spike	P	0 - 30
2105641	Triclopyr	5.19	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P367853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105639	Acesulfame K	3.72	Spike	P	0 - 30
2105639	AMPA	1.59	Spike	P	0 - 30
2105639	Endothall	1.45	Spike	P	0 - 30
2105639	Glufosinate	3.50	Spike	P	0 - 30
2105639	Glyphosate	0.892	Spike	P	0 - 30
2105639	Sucralose	1.60	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P368025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106018	Color (true)	0.680	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
 Batch ID: P368234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	Total Alkalinity	0.337	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P368376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106001	Total Alkalinity	1.41	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P368347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	TDS	0.990	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P368237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105867	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
 Batch ID: P368238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106005	Fluoride	0.986	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P368052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2105686	Organic Carbon	0.663	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
 Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2105880
Field Sample ID: G1TLHR0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	106	P	30 - 160
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	111	P	30 - 160
EPA 8321B	Diuron-d6	99.1	P	30 - 160
EPA 8321B	Endothall-d6	574	F	30 - 160
EPA 8321B	Endothall-d6	574	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	35.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	128	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	143	P	30 - 160
EPA 8321B	Sucralose-d6	143	P	30 - 160

Lab Sample ID: 2105881
Field Sample ID: G1TLHR0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	129	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	99.7	P	30 - 160
EPA 8321B	Endothall-d6	98.6	P	30 - 160
EPA 8321B	Endothall-d6	98.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	58.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	118	P	30 - 160
EPA 8321B	Primidone-d5	122	P	30 - 160
EPA 8321B	Sucralose-d6	93.7	P	30 - 160
EPA 8321B	Sucralose-d6	93.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92954

Included Lab Sample IDs: 2105867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	101	102	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A92993

Included Lab Sample IDs: 2105864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A92997

Included Lab Sample IDs: 2105866, 2105869

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.3	96.4	P/P	90 - 110
O-Phosphate-P	99.3	98.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93008

Included Lab Sample IDs: 2105864, 2105867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93050

Included Lab Sample IDs: 2105868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A93064

Included Lab Sample IDs: 2105867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A93078

Included Lab Sample IDs: 2105880, 2105881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	95.9	P/P	50 - 150
Acetaminophen	139	141	P/P	60 - 160
Bentazon	107	104	P/P	50 - 160
Carbamazepine	110	110	P/P	60 - 150
Diuron	117	115	P/P	60 - 150
Fenuron	107	109	P/P	60 - 150
Fluridone	113	111	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93078

Included Lab Sample IDs: 2105880, 2105881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Hydrocodone	108	111	P/P	60 - 150
Ibuprofen	84.6	86.7	P/P	50 - 160
Imazapyr	79.2	72.2	P/P	50 - 150
Imidacloprid	97.4	110	P/P	60 - 150
Linuron	110	106	P/P	60 - 150
MCPP	111	112	P/P	50 - 150
Naproxen	122	122	P/P	50 - 160
Primidone	99.3	101	P/P	60 - 150
Pyraclostrobin	120	114	P/P	60 - 150
Triclopyr	94.9	99.0	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A93079

Included Lab Sample IDs: 2105865, 2105868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	99.1	P/P	90 - 110
Organic Carbon	98.6	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93082

Included Lab Sample IDs: 2105865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93085

Included Lab Sample IDs: 2105868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93099

Included Lab Sample IDs: 2105880, 2105881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	132	131	P/P	60 - 160
Endothall	110	111	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93119

Included Lab Sample IDs: 2105880, 2105881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	86.8	77.9	P/P	60 - 160
Glufosinate	86.6	76.4	P/P	60 - 160
Glyphosate	84.4	78.3	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93124

Included Lab Sample IDs: 2105865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93125

Included Lab Sample IDs: 2105865, 2105868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	102	P/P	90 - 110
Kjeldahl Nitrogen	95.4	93.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93171

Included Lab Sample IDs: 2105867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A93171

Included Lab Sample IDs: 2105864, 2105867

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.1	P/P	90 - 110
Fluoride	98.1	97.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A93211

Included Lab Sample IDs: 2105882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	101	100	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Zinc	99.8	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93214

Included Lab Sample IDs: 2105865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93228

Included Lab Sample IDs: 2105864

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93281

Included Lab Sample IDs: 2105868

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	93.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A93331

Included Lab Sample IDs: 2105880, 2105881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	67.7	77.2	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93596

Included Lab Sample IDs: 2105882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	105	P/P	90 - 110
Antimony	97.3	97.1	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Cadmium	100	99.5	P/P	90 - 110
Chromium	96.3	94.5	P/P	90 - 110
Lead	102	101	P/P	90 - 110
Nickel	102	100	P/P	90 - 110
Silver	105	104	P/P	90 - 110
Thallium	97.0	96.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93660

Included Lab Sample IDs: 2105882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	98.9	97.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A93666

Included Lab Sample IDs: 2105882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	98.8	100	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision	MS
									SMP	
EPA 180.1 Rev. 2.0	Turbidity								4.03	
EPA 200.7 Rev. 4.4	Iron	104			99.1	98.3	97.6			0.714
	Manganese	100			93.9	93.9	94.0			0.122
	Zinc	98.4			101	99.4	100			0.644
EPA 200.8 Rev. 5.4	Aluminum	100			113	98.7	92.0			7.02
	Antimony	99.5			107	101	94.5			6.76
	Arsenic	101			117	108	102			5.47
	Cadmium	101			102	99.2	93.5			5.91
	Chromium	97.5			91.0	91.1	86.3			5.31
	Copper	97.7			71.5	98.7	94.3			4.59
	Lead	102			110	101	94.1			6.75
	Nickel	99.6			107	98.1	94.1			4.18
	Selenium	96.0			101	103	101			1.97
	Silver	103			101	97.4	93.3			4.29
	Thallium	102			109	100	94.3			5.85
EPA 300.0	Bromide	95.2			91.3	91.8	92.9			0.403
EPA 300.0 Rev. 2.1	Chloride	101			101	103			0.923	
	Sulfate	103			102	103			1.17	
EPA 350.1 Rev. 2.0	Ammonia-N	110			98.9	96.6				1.66
	Ammonia-N	104			109	109				0.0502
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108			98.4	97.1				1.00
	Kjeldahl Nitrogen	105			103	106				2.25
EPA 353.2 Rev. 2.0	NO2NO3-N	100			93.5	94.5				0.563
	NO2NO3-N	99.5			99.6	99.6				0.0
EPA 365.1 Rev. 2.0	Total-P	99.9			101	97.6				3.28
	Total-P	102			99.9	98.9				0.993
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100			95.2	93.7				1.02
	O-Phosphate-P	99.6			93.0	94.0				1.07
EPA 8321B	2,4-D	157								5.11
	Acesulfame K	131			106	111				3.72
	Acetaminophen	121			115	112				2.57
	AMPA	74.0			53.6	55.8				1.59
	Bentazon	111			64.3	66.7				3.64
	Carbamazepine	108			100	101				0.342
	Diuron	109			98.8	97.3				1.41
	Endothall	106			90.9	89.6				1.45
	Fenuron	109			87.1	85.4				2.00
	Fluridone	103			107	111				4.02
	Glufosinate	82.9			71.3	73.9				3.50
	Glyphosate	85.2			81.2	79.9				0.892
	Hydrocodone	102			108	102				5.44
	Ibuprofen	104			133	125				6.38
	Imazapyr	75.3			88.8	84.8				4.31
	Imidacloprid	108			217	226				3.47
	Linuron	93.7			94.4	93.6				0.874
	MCPP	160			243	239				1.35
	Naproxen	133			144	142				1.83
	Primidone	102			115	99.3				14.6
	Pyraclostrobin	101			113	118				4.00
	Sucralose	71.1			81.6	82.9				1.60
	Triclopyr	108			186	195				5.19
SM 2120 B	Color (true)	102							0.680	
SM 2320 B-97	Total Alkalinity	103							0.337	
	Total Alkalinity	102							1.41	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 2540 C-97	TDS				0.990	
SM 4500 F-C-97	Fluoride	95.5	96.4 97.0			0.473
	Fluoride	95.5	93.5 95.0			0.986
SM 5310 B-00	Organic Carbon	100	98.9 97.8			0.663

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2105864, 2105867
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2105882
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2105882
EPA 300.0 / E31780	Bromide in aqueous matrices	2105864
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2105867
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2105867
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2105865, 2105868
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2105865, 2105868
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2105865, 2105868
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2105865, 2105868
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2105866, 2105869
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2105880, 2105881
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2105880, 2105881
SM 2120 B / E31780	True Color measured at 450 nm	2105867
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2105864, 2105867
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2105867
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2105864, 2105867
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2105864, 2105867
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2105865, 2105868

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/24/2019			07/24/2019 17:04	Adrian Shelby	2105864, 2105867
EPA 200.7 Rev. 4.4	07/24/2019	07/31/2019 15:35	Elliott D. Healy	08/01/2019 19:15	Betina Topolski	2105882
EPA 200.8 Rev. 5.4	07/24/2019	07/31/2019 15:35	Elliott D. Healy	08/16/2019 19:18	Martin Acosta	2105882
	07/24/2019	07/31/2019 15:35	Elliott D. Healy	08/17/2019 00:42	Martin Acosta	2105882
	07/24/2019	07/31/2019 15:35	Elliott D. Healy	08/20/2019 10:42	Martin Acosta	2105882
	07/24/2019	07/31/2019 15:35	Elliott D. Healy	08/20/2019 22:54	Martin Acosta	2105882
EPA 300.0	07/24/2019			07/25/2019 20:17	Jhamieka S. Greenwood	2105864
EPA 300.0 Rev. 2.1	07/24/2019			07/26/2019 01:50	Jhamieka S. Greenwood	2105867
EPA 350.1 Rev. 2.0	07/24/2019			08/01/2019 16:56	Virginia P. Brown	2105865
	07/24/2019			08/05/2019 16:45	Virginia P. Brown	2105868
EPA 351.2 Rev. 2.0	07/24/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 10:01	Joseph Suarez	2105865
	07/24/2019	07/29/2019 13:00	Adrian Shelby	07/30/2019 11:13	Joseph Suarez	2105868
EPA 353.2 Rev. 2.0	07/24/2019			07/26/2019 10:46	Beverly Y. Sanders	2105868
	07/24/2019			07/29/2019 08:43	Beverly Y. Sanders	2105865
EPA 365.1 Rev. 2.0	07/24/2019	07/26/2019 11:58	Vijayalakshmi Reddy	07/29/2019 09:13	Lipi Saha	2105868
	07/24/2019	07/29/2019 11:58	Vijayalakshmi Reddy	07/30/2019 10:53	Lipi Saha	2105865
EPA 365.1 Rev. 2.0 dissolved	07/24/2019			07/24/2019 16:49	Jhamieka S. Greenwood	2105866
	07/24/2019			07/24/2019 17:26	Jhamieka S. Greenwood	2105869
EPA 8321B	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/28/2019 04:00	Rebecca Ware	2105880
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/28/2019 04:14	Rebecca Ware	2105881
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/29/2019 16:39	Rebecca Ware	2105881
	07/24/2019	07/25/2019 11:00	Rebecca Ware	07/29/2019 17:22	Rebecca Ware	2105880
	07/24/2019	07/25/2019 11:00	Rebecca Ware	08/06/2019 20:02	Rebecca Ware	2105880
	07/24/2019	07/25/2019 11:00	Rebecca Ware	08/06/2019 20:14	Rebecca Ware	2105881
	07/24/2019	07/26/2019 14:00	Hoor Shaik	07/27/2019 06:36	Juyoung Kim	2105880
	07/24/2019	07/26/2019 14:00	Hoor Shaik	07/27/2019 07:10	Juyoung Kim	2105881
SM 2120 B	07/24/2019			07/25/2019 16:29	Madeline Funaro	2105867
SM 2320 B-97	07/24/2019			07/31/2019 02:10	Dale L. Simmons	2105867
	07/24/2019			08/02/2019 10:33	Dale L. Simmons	2105864
SM 2540 C-97	07/24/2019			07/25/2019 13:30	Sima Feizi	2105867
SM 2540 D-97	07/24/2019			07/25/2019 13:30	Sima Feizi	2105864, 2105867
SM 4500 F-C-97	07/24/2019			07/31/2019 01:59	Dale L. Simmons	2105867
	07/24/2019			07/31/2019 08:54	Dale L. Simmons	2105864
SM 5310 B-00	07/24/2019			07/26/2019 16:40	Madeline Funaro	2105865
	07/24/2019			07/26/2019 21:01	Madeline Funaro	2105868